FRACTIONAL EXPONENT AND RADICAL EXPRESSION

Another interesting mathematical model that has extensive use in natural sciences, business and economics are the transcendental functions. The fractional exponents and radical expressions. The said expressions can be used to express ***exponential growth or decay of microorganism in biology, amount of radioactive substance given its half-life in chemistry, compound interest and annuities in business and economics and population growth in demography.***

You have to show to the class the importance of investment to every individual. You want to give the class the idea of saving money in the future which shows the application of on fractional exponent or radical expressions using this formula

Compound interest and annuities in business and economics :

$$A = P\,(1 + r/m)^{mt}\ \text{(increasing)}$$

and

$$A = P\,(1 - r/m)^{mt}\ \text{(decreasing)}$$

where A is the total amount after t years, **P** is the principal amount, **r** is the interest rate, and **m** is the number of times the amount is compounded a year.

RUBRICS

STANDARDS	4	3	2	1	SCORES
ANALYSIS AND COMPUTATION OF THE PROBLEM	Thorough analysis of the problem with accurate solutions.	Analysis of the problem is evident, considerable accuracy.	Analyses the problem with some success, accuracy needs to improve.	Very little evidence of analysis. Some educated guesses. Accuracy is weak.	
DATE OF COMPLETION	Pass before or on the due date.	Pass one day after the due date.	Pass two- three days after the due date.	Pass four days onward after the due date.	
OVERALL PRESENTATION	The presentation is exceptionally attractive in terms of design, layout and neatness.	The presentation is attractive in terms of design, layout and neatness.	The presentation is acceptably attractive though it may be a bit messy.	The presentation is distractingly messy or very poor designed. It is not attractive	

Solve .

1. Kylle deposited Php 1,000 in a bank that pays 5% compound interest annually. How much money will she have after 4 years?

   a. Identify the given.
   b. Identify what is ask.
   c. Formula to be used.
   d. Solution

2. Ammabel has Php 8,000 in a bank which is below her required maintaining balance. As a penalty, her money decreases at the rate of 10% every month. How much money will she have after one year?

   a. Identify the given.

   b. Identify what is ask.

   c. Formula to be used.

   d. Solution

3. David deposited an amount of Php 10,000 in a bank that pays 4% annual interest compounded monthly. How much money will he have in the bank after 5 years?

a. Identify the given.

b. Identify what is ask.

c. Formula to be used.

d. Solution

Find the annual rate given the principal P, the time t and the type of compounding. Note the initial time t = 0.)

	Principal P	Time t	Compounding m	Balance A	solution	Rate r
1	500	8 years	Monthly	2 087.9		
2	3 000	25 years	Semi-annually	10 311.3		
3	7 500	5 years	Annually	17 158.2		
4	2 000	4 years	Quarterly	255 473		
5	10 000	20 years	quarterly	40 552		

Find the time t given the principal P, the rate of interest r and the type of compounding.(Note: The initial time t = 0).

	Principal P	Balance A	Rate r	Compounding m	solution	Time T
1	5 000	20 227	0.15	Annually		
2	20 000	43 657.5	0.10	Semi-annually		
3	250 000	1 061 962	0.30	Quarterly		
4	8 500	55 397 830	0.60	Monthly		
5	9 500	115 734	0.25	monthly		